



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

September 19, 2013

Via E-mail

Dr. Michael Pellini, M.D.,
President, Chief Executive Officer and Director
Foundation Medicine, Inc.
One Kendall Square, Suite B3501
Cambridge, MA 02139

**Re: Foundation Medicine, Inc.
Amendment No. 4 to Registration Statement on Form S-1
Filed September 12, 2013
File No. 333-190226**

Dear Dr. Pellini:

We have reviewed your amended registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

The Offering, page 5

1. We note that the 26,283,454 shares of common stock to be issued and outstanding after this offering on page 5 differ from the 26,281,058 pro forma as adjusted shares issued and outstanding on page 46 and 49. Please revise, as necessary, so that these amounts agree or explain to us why you believe a revision is not necessary.

Dilution, page 48

2. It appears to us that your pro forma, and pro forma as adjusted net tangible book value includes deferred issuance costs of \$1.29 million (page F-10). Please revise to exclude this asset from your net tangible book value or explain to us why you believe these deferred issuance costs represent a tangible asset.

3. We note in your Capitalization disclosures on page 46 that your pro forma, and pro forma as adjusted issued and outstanding shares include 962,703 shares of unvested common stock which are subject to repurchase by you as of June 30, 2013. For purposes of calculating your pro forma, and pro forma as adjusted net tangible book value per share on page 48, it appears that you have excluded these unvested shares that are subject to repurchase. Please explain to us why you do not use a consistent number of pro forma, and pro forma as adjusted issued and outstanding shares for purposes of your Capitalization and Dilution disclosures, or revise your net tangible book value per share as necessary.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Myra Moosariparambil at (202) 551-3796 or John Archfield at (202) 551-3315 if you have questions regarding comments on the financial statements and related matters. Please contact Erin Wilson at (202) 551-6047 or James Lopez at (202) 551-3536 with any other questions.

Sincerely,

/s/ Pamela Howell
for

John Reynolds
Assistant Director